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(54) **Current sensor operating in accordance with the principale of compensation**

(57) The invention relates to a current sensor (1) operating in accordance with the principle of compensation, comprising a gapped magnetic core with
- a primary coil (3) through which the current to be measured flows, creating a magnetic field,
- a secondary coil (7), through which a compensation current flows, which generates a magnetic field compensating that of the primary coil (3),
- a terminating resistor (8) connected in series to the secondary coil (7),
- sensor means (4) in the air gap of the magnetic core, which are exposed to the resulting magnetic field of the primary and secondary coils (3, 7),
- a booster circuit (6) connected downstream of the sensor means (4) which feeds the compensation current to the secondary coil (7) via the terminating resistor (8),

wherein the booster circuit (6) comprises a switched mode amplifier containing a modulator (12) and a power MOSFET output bridge with at least a first and a second power MOSFET (22, 23),

whereby the modulator (12) has two complementary outputs (18, 18'), and whereby the gate of the first MOSFET (23) is connected to a first modulator output (18), and whereby the gate of the second MOSFET (22) is connected to a second modulator output (18'), which is complementary to the first modulator output (18), via a pulse transformer, and whereby further the gate of the second MOSFET (22) is connected to a blocking and discharge circuit in order to effectively control the gate of the second MOSFET (22).

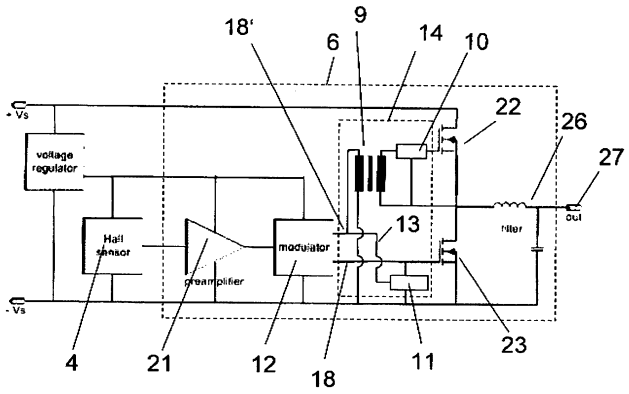

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 12 00 2706

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2004/204875 A1 (KOPKEN HANS-GEORG [DE]) 14 October 2004 (2004-10-14) * abstract; claims 1-21; figures 1-6C * * paragraph [0008] - paragraph [0024] * * paragraph [0032] - paragraph [0081] * -----	1-9	INV. G01R15/18 G01R15/20
A	DE 197 05 767 A1 (VACUUMSCHMELZE GMBH [DE]) 27 August 1998 (1998-08-27) * abstract; claims 1-7; figures 1-6 * * column 2, line 18 - column 3, line 55 * * column 4, line 5 - column 6, line 41 * -----	1-9	
A	US 5 654 630 A (SHIMOYAMA KENICHI [JP] ET AL) 5 August 1997 (1997-08-05) * abstract; claims 1-5; figures 1-3 * * column 1, line 53 - column 2, line 49 * * column 3, line 6 - column 6, line 32 * -----	1-9	
A	US 5 146 156 A (MARCEL ETTER [CH]) 8 September 1992 (1992-09-08) * abstract; claims 1-5; figures 1-3 * * column 1, line 34 - column 2, line 29 * * column 2, line 40 - column 5, line 7 * -----	1-9	

TECHNICAL FIELDS SEARCHED (IPC)

G01R

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	17 April 2015	Nadal, Rafael

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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